

Work Order ID 148252

Tuesday, June 28, 2016 8:57:56 AM

148252

Page 1

Item ID: D3137-043

Revision ID:

Item Name: Bracket Assembly

Start Date: 7/8/2016

Start Qty: 400

Required Date: 7/22/2016

Req'd Qty: 400

Reference:

DAS

Approvals:

Process Plan:

21

9-89

Date: JUL 04 2016

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3137

Rev F

100

100

Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

Cut blanks: (.500" x 2.000") 5.570" long

0.00

0.06

8 2167-12

P.T.O.

110

110

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine D3137-7 as per Folio FA3308and Dwg D3137 Identify as D3137-72-Deburr3-Scribe batch number

0.00

0.52

8 1 DAS 20 9-89 16-07-17

120

120

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.01

8 1 DAS 20 9-89 16-07-17

DQA:

Date: 16-08-09



QA Closed

Date: 16/08/09

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: <u>148 252</u> Part No. <u>D3137-7</u> NCR No. <u>16-5941</u>		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☒</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Date: <u>16-07-15</u>		Step #: <u>110</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval																																																																			
Description Work Order Deviation				Disposition		PD 16-07-15																																																																			
Material is width is a bit small & not square, Part came out of jig.				Scrap & Replace <u>B 132 946</u>		Completed By DAS 20 16-07-15 9-89																																																																			
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Tuesday, June 28, 2016 8:57:56 AM

Page 2

8 _____ ^{DAS}
38
JUL 9 8 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
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								Lead hand / Supervisor Approval Verification																	
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Root Cause		FAULT CATEGORY																							
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Work Order ID 148252

Tuesday, June 28, 2016 8:57:56 AM

148252

Page 3

Item ID: D3137-043 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket Assembly
Start Date: 7/8/2016 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 7/22/2016 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Identify as per dwg & Stock Location: <u>8019</u>	0.00				8		DAS 8 9-89	
160									
Packaging	Memo	0.01							
Packaging									
170	QC21- Final Inspection - Work Order Release	0.00							
170									
QC	Memo	0.07							
Quality Control									

JUL 19 2016

DAS
21
9-89

JUL 19 2016

JUL 19 2016

DAS
21
9-89

JUL 19 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Tuesday, June 28, 2016 8:57:56 AM

148252

D3137-043

Required Qty: 4.00

IPP Rev B 08.07.03 ECN1207 EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3137-3		Manufactured	No			140	Each	93.0000	1	4			DAS 36 9-89
D3137-3 Guide													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST019				1					
				140659				1					
				ST025A				92					
				140744				92					
D3137-5		Manufactured	No			140	Each	31.0000	1	4			DAS 36 9-89
D3137-5 Washer													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST019				31					
				138927				9					
				147380				22					
M174B0.500X02.000		Purchased	No			140	f	10.9160	0.4643	1.954947			
M174B0 500X02 000 17-4 SS Bar .500 x 2.00													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				MAT010				10.916					
				m128572				7.666					
				m132946				3.25					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
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Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
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Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Tuesday, June 28, 2016 8:57:56 AM

Page 2

Work Order ID: 148252

148252

Parent Item: D3137-043

D3137-043

Parent Item Name: Bracket Assembly

Start Date: 7/8/2016

Required Date: 7/22/2016

Start Qty: 4.00

Required Qty: 4.00

MS24694-S101

Purchased

No

100

Each

60.0000

1

4

MS24694-S101

Screw

16/07/18 68-6
9C
SYO

Location

Loc Qty

Loc Code

ST283

60

M129909

60

8

DQA: _____ Date: _____

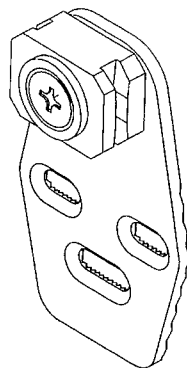


WORK ORDER NON-CONFORMANCE / UPDATE

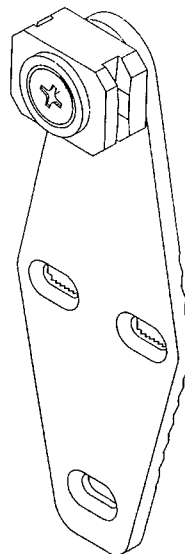
QA Closed: _____ Date: _____

Work Order update only ☐

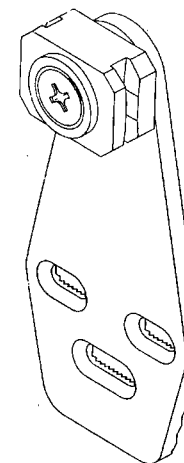
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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



D3137-041 BRACKET ASSEMBLY



D3137-043 BRACKET ASSEMBLY

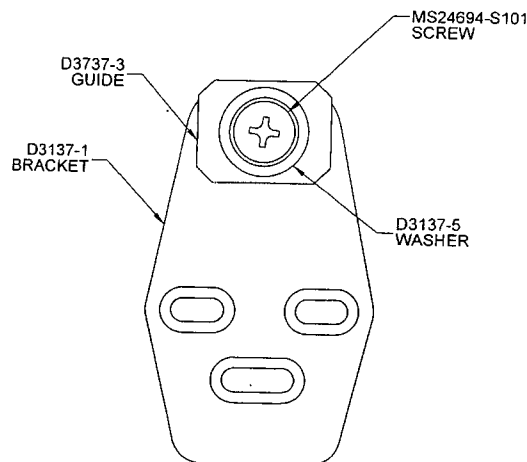


D3137-045 BRACKET ASSEMBLY

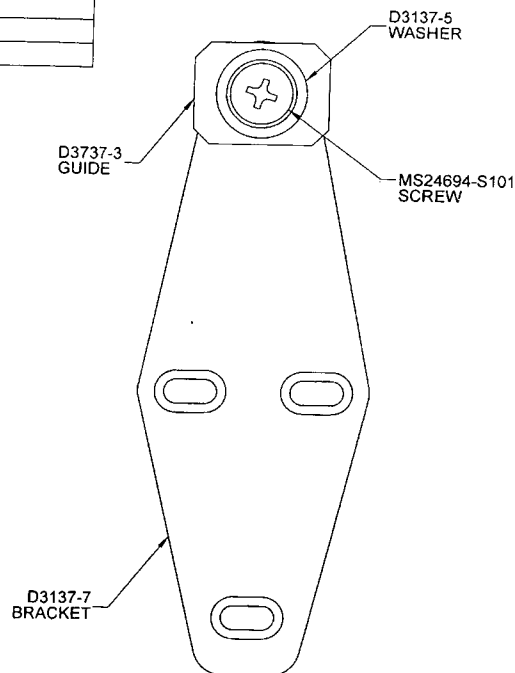
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 148252 MC
16-07-04

F		REDRAWN & REFORMATTED IN SOLIDWORKS. SHEET 3 ZONE A.5 DIM 2.36 WAS 2.48. ZONE A.4 0.480 DIM WAS 0.605. ZONE A.3 0.67 DIM WAS 0.79. ZONE B.5 4.850 DIM WAS 4.975 & ZONE B.6 5.29 DIM WAS 5.41. REASON: PART TRIMMED DUE TO INTERFERENCE WITH EXECUTIVE INTERIOR.		AJS	08.05.30
E	ADD -.045	RF	05.11.23		
D	RE-DESIGN D3137-5; CHANGE DIMS	DS	04.11.03		
C	ADD -.043	DS	03.08.15		
B	ADD RIDGES; ADD MATERIAL PROP	DS	03.01.16		
A	NEW ISSUE	DS	02.04.17		
REV.	DESCRIPTION	BY	DATE		
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3137 TITLE BRACKET ASSEMBLY SCALE NTS DATE 08.05.30 COPYRIGHT © 2002 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			
DRAWN	AJS				
CHECKED	<i>[Signature]</i>				
MFG. APPR.	<i>[Signature]</i>				
APPROVED	<i>[Signature]</i>				
DE APPR.	<i>[Signature]</i>	REV. F SHEET 1 OF 5			

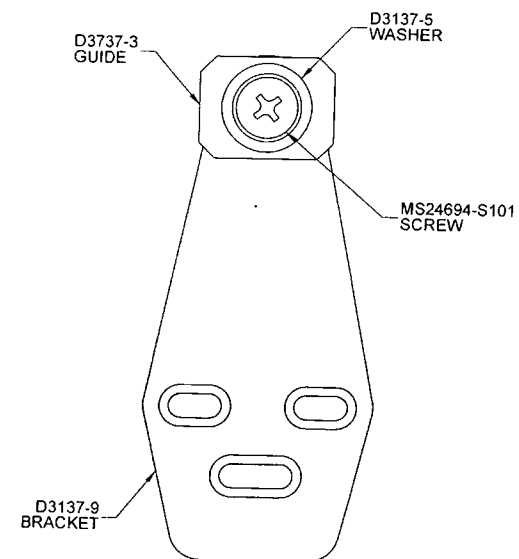
QTY. -041	QTY. -043	QTY. -045	PART NUMBER	DESCRIPTION
X			D3137-041	BRACKET ASSEMBLY
	X		D3137-043	BRACKET ASSEMBLY
		X	D3137-045	BRACKET ASSEMBLY
1			D3137-1	BRACKET
1	1	1	D3137-3	GUIDE
1	1	1	D3137-5	WASHER
	1		D3137-7	BRACKET
		1	D3137-9	BRACKET
1	1	1	MS24694-S101	SCREW



D3137-041 BRACKET ASSEMBLY



D3137-043 BRACKET ASSEMBLY



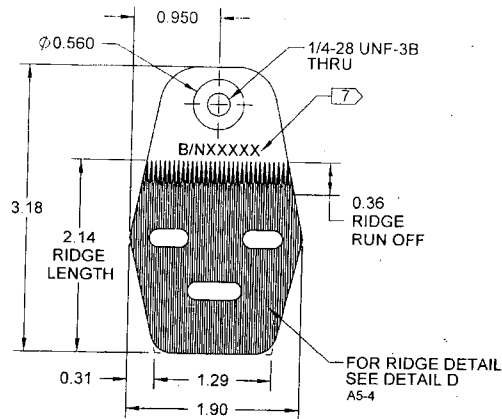
D3137-045 BRACKET ASSEMBLY

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.18 lbs -041
: 0.32 lbs -043
: 0.27 lbs -045

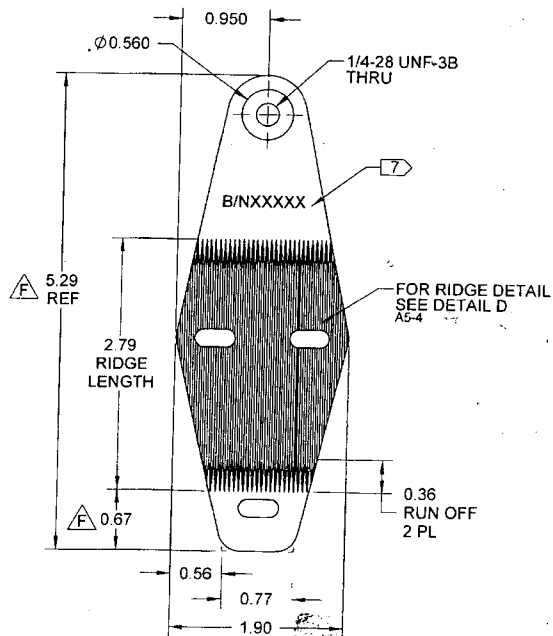
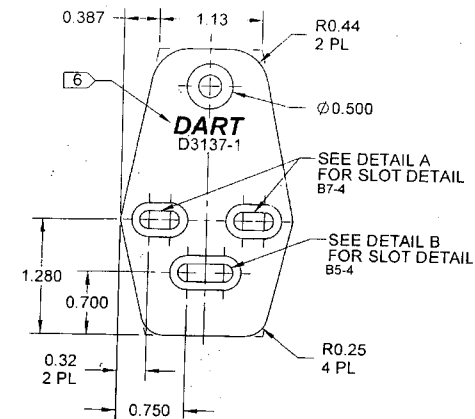
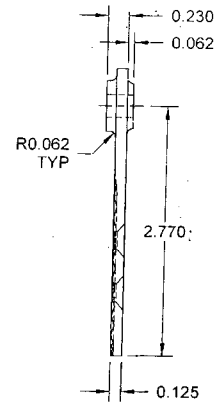
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28-06-26/10

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DATE	08.05.30	SHEET 2 OF 5
		SCALE
		NTS

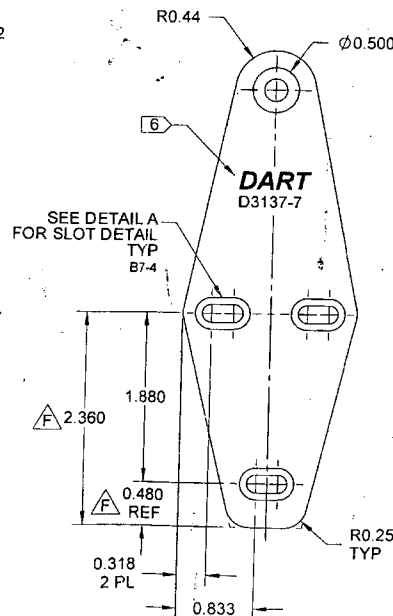
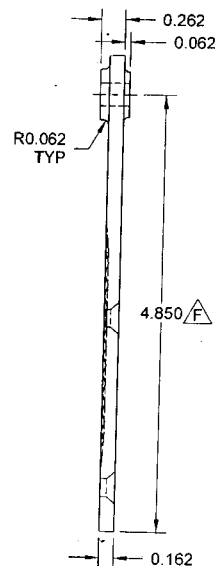
WO # 148252



D3137-1 BRACKET



D3137-7 BRACKET

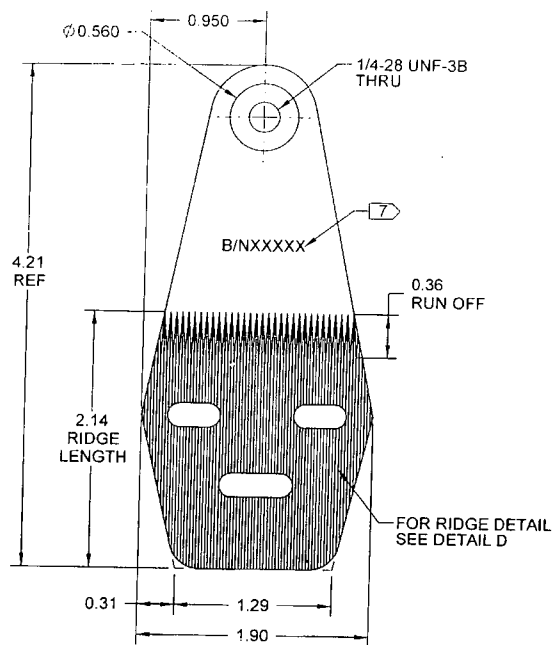


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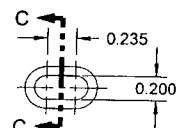
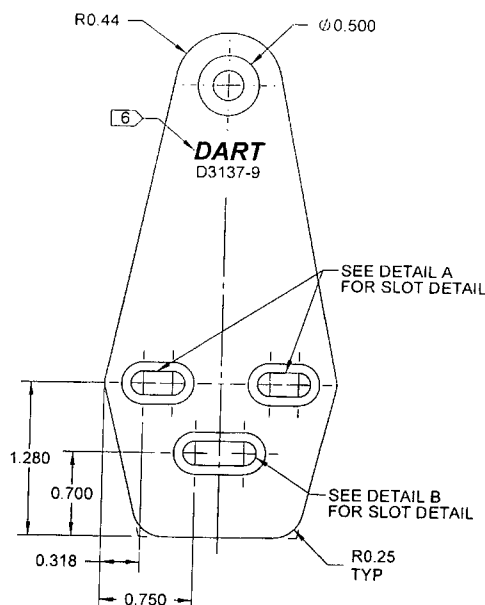
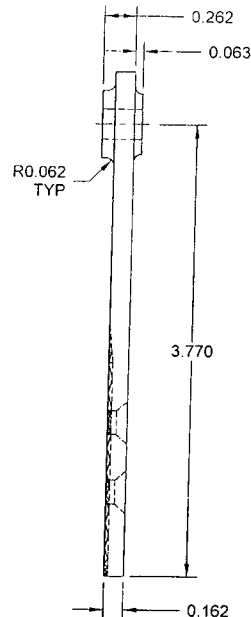
- 1) MATERIAL: -1 & -7
17-4PH STAINLESS STEEL
PER AMS 5604 OR 5643
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
PER DART SPEC. M17-4-B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: ENGRAVE DART LOGO USING 0.20 HIGH LETTERS & P/N WITH USING .15 HIGH LETTERS TO A MAX. DEPTH OF 0.010.
- 7) SCRIBE WITH DART B/N USING VIBRATING STYLUS
- 8) WEIGHT: SEE ASSEMBLED WEIGHT ON SHEET 2
- 9) -1 REPLACES PREMIER P/N B30-23000-105/-1

RELEASED
08-05-30

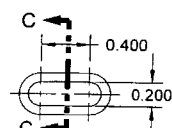
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DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D3137	SHEET 3 OF 5
APPROVED		TITLE	SCALE
DE APPR.		BRACKET ASSEMBLY	NTS
DATE	08.05.30	COPYRIGHT © 2002 BY DART AEROSPACE LTD	



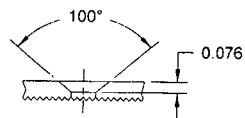
D3137-9 BRACKET



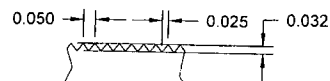
**DETAIL A
(SLOT DETAIL)**



**DETAIL B
(SLOT DETAIL)**



**SECTION C-C
(SLOT DETAIL)**



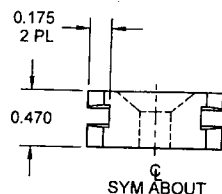
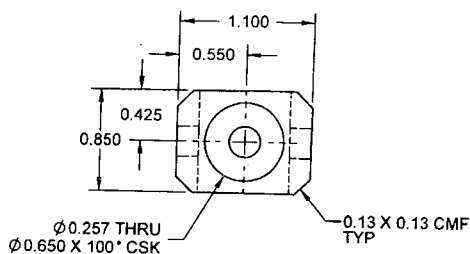
**DETAIL D
SCALE 2X
(TYPICAL RIDGE DETAIL)**

NOTES:

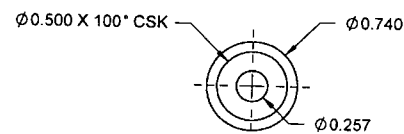
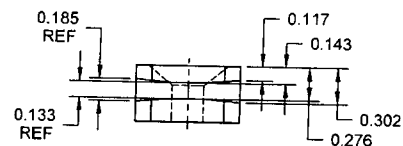
- 1) MATERIAL: 17-4PH STAINLESS STEEL
PER AMS 5604 OR 5643
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
PER DART SPEC. M17-4-B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: ENGRAVE DART LOGO USING 0.20 HIGH LETTERS & P/N WITH USING .15 HIGH LETTERS TO A MAX. DEPTH OF 0.010.
- 7) SCRIBE WITH DART B/N USING VIBRATING STYLUS
- 8) WEIGHT: SEE ASSEMBLED WEIGHT ON SHEET 2
- 9) REPLACES PREMIER P/N B30-23000-105/-106

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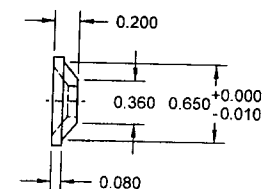
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D3137-3 GUIDE



D3137-5 WASHER



NOTES:

- 1) MATERIAL: -3
DELIN II 150E OR ACETRON GP ACETAL, BAR
(REF DART SPEC M-DELIN-B)
-5
6061-T6 (OR 6061-T651/ T6510/ T6511/ T62) ALUMINUM BAR
PER-AMS-QQ-A-225/8 (OR AMS 4117/ 4128/ 4145/ 4116)
OR PER-QQ-A-200/8 (OR AMS 4160)
REF. DART SPEC M6061T6R
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 (-5 ONLY)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: SEE ASSEMBLED WEIGHT ON SHEET 2
- 8) -3 REPLACES PREMIER P/N B30-2300-207
-5 REPLACES PREMIER P/N B30-2300-209

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18.07.01

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